LAKEWIDE MANAGEMENT ANNEX

OVERVIEW

The Great Lakes are comprised of five of the twenty largest lakes in the world by volume: Superior (3), Michigan (7), Huron (8), Ontario (12) and Erie (18). The Great Lakes are connected and discharge through major river systems: the St. Marys, St. Clair (including Lake St. Clair), Detroit, Niagara and St. Lawrence. Given the size and ecological complexity of the lakes, restoring and protecting Great Lakes water quality and ecosystem health sometimes requires an approach that is specifically tailored to an individual lake.

In the Lakewide Management Annex of the 2012 GLWQA, the United States and Canada commit to establishing Lakewide Action and Management Plans (LAMPs) for each of the five Great Lakes and their connecting river systems. These individualized plans will serve as blueprints for action, as they will identify and prioritize desired restoration and protection activities on each of the Great Lakes.

This Annex's implementation is supported by the Lakewide Management Annex Subcommittee, co-led by the United States Environmental Protection Agency and Environment and Climate Change Canada. Organizations on the subcommittee include: Chippewa-Ottawa Resource Authority, Conservation Ontario, Dept. of Fisheries and Oceans, Great Lakes Indian Fish and Wildlife Commission, Great Lakes-St. Lawrence Cities Initiative, Illinois Department of Natural Resources, McMaster University, Métis Nation of Ontario, Michigan Department of Environmental Quality, Minnesota Pollution Control Agency, National Oceanic and Atmospheric Administration, New York State Dept. of Environmental Conservation, Ohio Environmental Protection Agency, Ontario Ministry of Agriculture, Food and Rural Affairs, Ontario Ministry of Natural Resources and Forestry, Ontario Ministry of the Environment and Climate Change, Parks Canada, Pennsylvania Dept. of Environmental Protection, U.S. Army Corps of Engineers, United States Geologic Survey, Wisconsin Dept. of Natural Resources, Alliance for the Great Lakes, Ontario Federation of Anglers and Hunters [logos to be inserted].

PROGRESS TOWARD MEETING GLWQA COMMITMENTS

2012	2013	2014	2015	2016
• Published LAMP Annual Reports. • Established Lake Ontario Science and Monitoring Priorities • Finalized Lake Michigan Biodiversity	• Published LAMP Annual Reports. • Established Lake Michigan Science and Monitoring Priorities • Finalized Lake Erie Biodiversity Conservation	• Published LAMP Annual Reports. • Established Lake Superior Science and Monitoring priorities	• Published LAMP Annual Reports. • Established Lake Huron Science and Monitoring priorities • Finalized Lake Superior Biodiversity	• Published LAMP Annual Reports. • Finalized Lake Superior LAMP. • Finalized Nearshore Framework.

Conservation Strategy.	Strategy		Conservation Strategy.	

BINATIONAL ACTIONS TAKEN

Developing a nearshore framework to identify areas of high ecological value and those that are or may become subject to severe stress due to the cumulative effects of multiple stressors.

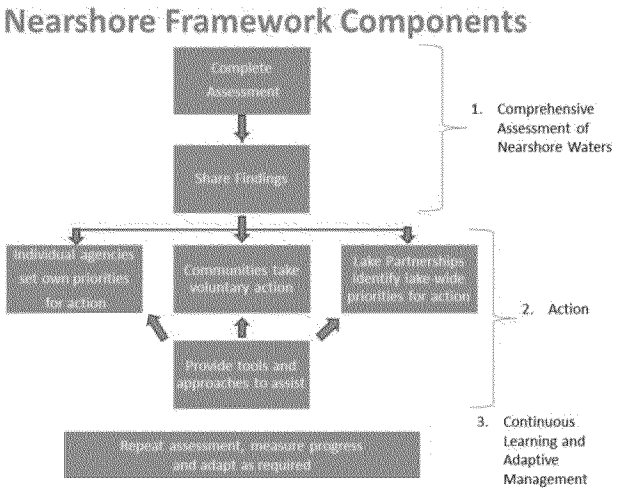
- The fragility of the nearshore as a key issue in the Great Lakes basin was highlighted in 2005 by more than 250 Great Lakes scientists who signed on to a report entitled *Prescription for Great Lakes Ecosystem Protection and Restoration (Avoiding the Tipping Point of Irreversible Changes)* (http://www.miseagrant.umich.edu/downloads/habitat/Prescription-for-the-Great-Lakes-08-2006.pdf).

- To develop the nearshore framework, the United States and Canada undertook a three-year process to engage a wide range of people and organizations throughout the Great Lakes basin. The resulting Nearshore Framework was approved by the United States and Canada in July 2016. Components of the Nearshore Framework are identified in Figure 5. The Parties will pilot test implementation of the framework in Lake Erie beginning in 2017.

- The framework provides a mechanism for undertaking a systematic, integrated and collective approach for assessing nearshore health and identifying and communicating cumulative impacts and stresses.

- Building on the information provided by the assessment, federal, state and provincial governments, tribal governments, First Nations, Métis, municipal governments, watershed management agencies, local public agencies and the public, individually and collectively, will be able to identify management priorities, take action to protect nearshore areas of high ecological value, protect water quality, and restore degraded areas.

Figure 5 – Components of the Great Lakes Nearshore Framework.



Developing the Lake Superior Lakewide Action and Management Plan.

- The schedule for the development and release of Lakewide Action and Management Plans (LAMPs) was confirmed in 2014. The Lake Superior LAMP was approved in June of 2016, and is the first LAMP completed under the 2012 GLWQA and the authoritative source for information on the Lake Superior ecosystem.

- The Lake Superior LAMP was developed with the help of over 30 science-based government agencies and involvement from over 50 other organizations, representing thousands of people and many diverse interests.

- The Lake Superior ecosystem continues to be in good condition, as exemplified by the good condition of the fisheries which is supported by a robust lower food web, in particular the self-sustaining populations of Lake Trout and increasing abundance of Lake Sturgeon; good ecological status of most major habitats on a lakewide scale, including coastal wetlands; and generally decreasing or stable concentrations of legacy contaminants. The LAMP also details ongoing and emerging threats to the ecosystem, including aquatic invasive species, climate change, loss of habitat connectivity, and chemical contaminants.

- Science priorities identified in the Lake Superior LAMP include: confirming lower food-web health and stability; determining progress being made on reducing nine persistent, bioaccumulative and toxic substances; determining progress being made on Lake Sturgeon rehabilitation; providing information needed to support implementation of fish rehabilitation plans; assessing baseline water quality conditions in areas of critical habitat and potentially significant land-use change; and identifying vulnerable cold-water tributaries to Lake Superior from various stressors such as climate change.

- To maintain the good condition of the Lake Superior ecosystem, and address threats to water quality and ecosystem health, the LAMP includes priority actions in the form of 29 projects that will be undertaken over the next five years through cooperative implementation among government agencies and others. Actions that the public can take are also identified.

Establishing Lake Ecosystem Objectives for each Great Lake, including its connecting river systems, as a benchmark against which to assess status and trends in water quality and lake ecosystem health.

- In October of 2014 a draft guidance document for the development of Lake Ecosystem Objectives (LEOs) and a draft framework linking the LEOs to the Agreement's General Objectives and the State of the Great Lakes Indicators were developed.

- The guidance suggests that LEOs should:
  - be practical and attainable or achievable within a 20-year timeframe;
  - provide sufficient direction for implementing LAMP actions;
  - have support from the agencies that implement the programs used to achieve the objective;
  - be based on sound, readily available data, so they can be reported on every five years; and,
  - taken together, be a comprehensive suite which addresses each 2012 GLWQA General Objective and lake stressor.

- A binational team has been formed to develop a draft suite of LEOs for Lake Erie for consultation.

- LEOs for the other lakes will be developed during the next reporting cycle (2017 to 2019).

Undertaking the lakewide management actions in cooperation and consultation with others.

- The United States and Canada have undertaken outreach and engagement activities through the work of the Lake Partnerships and the Annex Subcommittee.

- In 2015, eight webinars involving over 800 participants were held to update the basin-wide and individual lake stakeholder communities about progress under the Lakewide Management Annex, and to discuss possible approaches to outreach and engagement. Outreach and Engagement sub-committees were formed under each Lake Partnership to develop and implement an outreach and engagement strategy for each lake.

- In 2016, the Parties solicited interest from stakeholders in participating with the Lake Partnerships, including providing input on LAMP development and other Partnership activities to simply being kept apprised of Lake Partnership activities and receiving notice of requests for input on specific issues. The solicitation was sent through existing Great Lakes-related email distribution lists including GLIN-Announce, and the United States Environmental Protection Agency's and Environment and Climate Change Canada's Great Lakes email databases in order to reach a wide breadth of stakeholders.

- In 2016 the Parties also advised the Great Lakes community that the Lake Huron LAMP was being developed, and offered opportunities for input.

- In 2013, 2014, and 2015, LAMP Annual Reports were issued to provide an overview of accomplishments and challenges facing each lake. The 2015 LAMP Annual Reports, which are pictured in Figure 6, and the previous LAMP Annual Reports dating back to 2012 are available at www.binational.net (https://binational.net/category/a2-2/lamps-paaps/).

Figure 6 – 2015 LAMP Annual Reports.